

Biotechnologies towards Sustainable Development in Malaysia

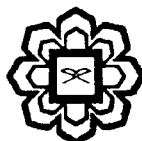
Zarina Zainuddin

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Zarina Zainuddin



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Chapter 23

Extraction of chitin and chitosan from Malaysian cephalopods “Sotong mengaban” (*Sepioteuthis lessoniana*) and “Sotong jarum” (*Loligo vulgaris*)

*Ahmed Jalal Khan Chowdhury, Mohd Hazman Mohd Salleh, Deny Susanti, Akbar John
and Jamaluddin Daud

*Corresponding author: jkchowdhury@ium.edu.my

Introduction

Chitin and its derivative chitosan are natural carbohydrate polymer found in the exoskeleton of crustaceans such as crabs, shrimps and lobster, including the exoskeleton of zooplankton organisms, coral and jellyfishes. Besides that, chitin also can be found in the exoskeleton of the insects such as ladybugs and butterflies and might as well be found in the cell walls of the mushroom and fungi (Tharanathan and Kittur, 2003). Chitosan may be converted from chitin, by *N*-deacytelation process. Commercially available chitosan is produced with a degree of deacytelation typically ranging from 60% of 2-amino-2-deoxy-D-glucose residue and above. Chitosan and its derivatives have wide range of applications includes biomedicine, food, biotechnology, agriculture, cosmetic and coagulants for waste treatment (Aranaz *et al.*, 2009). Chitosan and its derivatives include analgesic effect, antitumor activity, anticholesterolemic, emulsifying agent and antimicrobial activity.

The types of chitosan depend on the source of chitin which exists either α -chitin or β -chitin, depending on whether the linkage between glucosamine units is alpha- or beta-; for